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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/639,561	08/12/2003	Stefan Gustavsson	9342-99	5990

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EXAMINER

SUTHERS, DOUGLAS JOHN

ART UNIT	PAPER NUMBER
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2615

MAIL DATE	DELIVERY MODE
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06/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/639,561	Applicant(s) GUSTAVSSON, STEFAN	
	Examiner Douglas Suthers	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/6/04, 11/18/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615.

Drawings

2. The drawings are objected to because figure 2 has no labels on the axes, making it unclear as to what is shown. Also lines may be mislabeled (see specification section). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: The description of figure 2 seems to mix-up "200a-b" with "210a-b" and vice versa in many instances.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kick et al. (US 5495242).

6. Regarding claim 1, Kick discloses a method of operating an electronic device, comprising:

generating a microphone signal by a microphone (figure 1, item 14);

determining autocorrelation coefficients based on the microphone signal (column 4 lines 35-49);

determining gradient values from the autocorrelation coefficients (figure 9, first block shows sum of derivatives is found); and

determining presence of a noise component in the microphone signal based on the gradient values (noise if no siren detected).

7. Regarding claim 2, Kick discloses wherein determining the presence of the noise component in the microphone signal is based on smoothness of the gradient values (figure 9 second decision block).

8. Regarding claim 3, Kick discloses wherein determining the presence of the noise component in the microphone signal is based on whether a rate of change of the gradient values satisfies a threshold value (figure 9 second decision block).

9. Regarding claim 4, Kick discloses wherein:

determining autocorrelation coefficients comprises generating sampled values of the microphone signal (A to D converter 30) that are delayed by a range of delay values, and generating autocorrelation coefficients based on the delayed sampled values of the microphone signal (figures 7); and

determining the presence of the noise component comprises determining whether the gradient values are about equal to a threshold value within a subset of the range of delay values (figure 9 second decision block).

10. Regarding claim 5, Kick discloses wherein determining whether the gradient values are about equal to a threshold value comprises determining whether the gradient values are substantially zero for delay values that are substantially non-zero (figure 9 second decision block).

11. Regarding claim 6, Kick discloses wherein determining the presence of the noise component comprises determining whether the gradient values have a zero crossing for delay values that are substantially non-zero (figure 8, other peaks of YELP and HYPERYELP).

12. Regarding claim 7, Kick discloses wherein determining the presence of the noise component comprises determining whether the gradient values satisfy a threshold value (figure 9 second decision block).

13. Regarding claim 8, Kick discloses wherein the noise component in the microphone signal is wind noise (column 4 line 14).

14. Regarding claim 9, Kick discloses an electronic device, comprising:

a microphone (figure 1, item 14) that is configured to generate a microphone signal;

an autocorrelation unit that is configured to generate autocorrelation coefficients based on the microphone signal (column 4 lines 35-49);

a gradient unit that is configured to generate gradient values from the autocorrelation coefficients (figure 9, first block shows sum of derivatives is found); and
a wind detector that is configured to determine presence of a noise component in the microphone signal based on the gradient values (noise such as wind if no siren detected).

15. Regarding claim 10, Kick discloses wherein the wind detector is configured to determine the presence of a noise component in the microphone signal based on smoothness of the gradient values (figure 9 second decision block).

16. Regarding claim 11, Kick discloses wherein:

the autocorrelation unit is configured to generate sampled values of the microphone signal (A to D converter 30) that are delayed by a range of delay values, and is configured to generate autocorrelation coefficients based on the delayed sampled values of the microphone signal (figures 7); and

the wind detector is configured to determine the presence of a noise component in the microphone signal based on whether the gradient values are about equal to a

threshold value within a subset of the range of delay values (figure 9 second decision block).

17. Regarding claim 12, Kick discloses wherein the wind detector is configured to determine the presence of a noise component in the microphone signal based on whether the gradient values have a zero crossing for delay values that are substantially non-zero (figure 9 second decision block).

18. Regarding claim 13, Kick discloses wherein the wind detector is configured to determine whether the gradient values satisfy a threshold value (figure 9 second decision block).

19. Regarding claim 14, Kick discloses wherein the electronic device comprises a wireless communication terminal (14, emergency vehicle communicates through sound).

20. Regarding claim 15, Kick discloses wherein the noise component in the microphone signal is wind noise (column 4 line 14).

21. Regarding claim 16, Kick discloses further comprising a delay chain unit coupled between the microphone and the autocorrelation unit and that is configured to generate a plurality of delayed signal samples based on the microphone signal, wherein the

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autocorrelation unit is responsive to the plurality of delayed signal samples and the microphone signal (figures 7).

22. Regarding claim 17, Kick discloses The electronic device of claim 9, wherein the autocorrelation unit is configured to generate autocorrelation coefficients by weighting newer ones of the plurality of delayed signal samples greater than older ones of the plurality of delayed signal samples (samples in superframe weighed as unity, samples outside superframe are weighed as zero).

23. Regarding claim 18, Kick discloses a computer program product configured to process a microphone signal (figure 1, item 14) produced by a microphone in an electronic device, comprising:

- a computer readable storage medium (memory of 32) having computer readable program code embodied therein, the computer readable program code comprising:

- computer readable program code for determining autocorrelation coefficients based on the microphone signal (column 4 lines 35-49);

- computer readable program code for determining gradient values from the autocorrelation coefficients (figure 9, first block shows sum of derivatives is found); and

- computer readable program code for determining the presence of a noise component in the microphone signal based on the gradient values (noise if no siren detected).

24. Regarding claim 19, Kick discloses wherein the computer readable program code for determining the presence of a noise component comprises computer readable program code for determining the smoothness of the gradient values (figure 9 second decision block).

25. Regarding claim 20, Kick discloses wherein:

the computer readable program code for determining autocorrelation coefficients comprises computer readable program code for generating sampled values of the microphone signal that are delayed by a range of delay values, and computer readable program code for generating autocorrelation coefficients based on the delayed sampled values of the microphone signal (figures 7); and

the computer readable program code for determining the presence of the noise component comprises computer readable program code for determining whether the gradient values are about equal to a threshold value within a subset of the range of delay values (figure 9 second decision block).

26. Regarding claim 21, Kick discloses wherein the computer readable program code for determining the presence of a noise component comprises computer readable program code for determining whether the gradient values satisfy a threshold value (figure 9 second decision block).

Conclusion

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas Suthers whose telephone number is (571)272-0563. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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